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MARANDI, JAMES R	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/072,114	KIKINIS ET AL.	
	Examiner	Art Unit	
	JAMES R. MARANDI	2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,7-10,17,21-23,31,48,49 and 51-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7-10,17,21-23,31,48,49 and 51-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to applicant's amendment filed on 2/2/2010. Claims 1, 7-10, 17, 21-23, 31, 48, 49, and 51-64 are presently pending. Claims 2-6, 11-16, 18-20, 24- 30, 32- 47 and 50 have been cancelled. Claims 56- 64 are newly presented.

Response to Arguments

2. Applicant's arguments filed on 2/2/2010 have been fully considered but they are not persuasive.

2.1. As to "Priority Date of Pending Claims", applicant argues that "…the Office Action uses an improper legal standard for determining priority benefit, and at least independent claims 1, 17, 31, and 51 are entitled to the benefit of the earlier filing data". Page 10 of Remarks, 2nd paragraph

Examiner disagrees. First, applicant has not advanced any proof that any of the cited priority documents disclose **comparing contrast levels, brightness levels, or color saturation levels among the snapshots and determining the**

most presentable snapshot when the most presentable snapshot has a best contrast, a median brightness, or highest color saturation, as such any and all claims reciting such features are not entitled to the claimed priority. Second, independent claims 1, 17, 31, and 51 have been rejected under 35 U.S.C § 103 over Oosterhout in view of Cove. Both Oosterhout and Cove predate applicant's claimed priority dates.

2.2. With respect to claims 1 and 31, applicant argues that "***neither Oosterhout nor Cove, alone or in combination, teaches or suggests "displaying [a] reduced image of real-time programming on a side of the graphical representation of [a] polyhedron ...." The Office Action acknowledges on page 8 that Oosterhout does not disclose this feature, and furthermore, the Office never expressly alleges that Cove teaches this feature.*** ". Page 11 of Remarks, 3rd paragraph

Examiner disagrees. As described in the Office Action of 9/2/2009 (pages 7-9 for claim 1, and by the same analysis for claim 31 as in page 16), Oosterhout discloses (for the benefit of applicant, examiner has further highlighted the areas of emphasis) **a method comprising:**

providing a plurality of individual image areas in an EPG display (Fig. 2);

receiving a user selection corresponding to a selected channel (Fig. 3, elements 300,301,302);

detecting a video stream corresponding to the selected channel (upon selection of channel, 302, the corresponding stream is detected)**;**

capturing a plurality of snapshots snapshot from the video stream (video stream composed of plurality of I-frames, snapshots, which are captured and displayed on screen);

identifying a first snapshot from the plurality of snapshots captured from the video stream (the snapshot/frame received/detected);

converting the first snapshot captured into a reduced image of real-time programming (Fig. 9, e.g. TF2); **and**

displaying the reduced image of real-time programming in a first of the individual image areas (Fig. 9, lower portion of the full screen, image areas associated with the selected channels, reduced image may also be of reduced **resolution,** Col. 1, lines 64-67)**, wherein the reduced video image is associated with the selected channel** (TF2, RTL4, CNN, BRT are reduced images presented on the screen). Col. 3, line 20, through Col.5, line 23.

Oosterhout discloses a two dimensional EPG with representation of various programs as snapshots/ reduced images. Oosterhout is silent on:

displaying a graphical representation of a polyhedron,

displaying the reduced image **on a side of the graphical representation of the polyhedron**

However, Cove, in analogous art, discloses:

displaying a graphical representation of a polyhedron(Figs. 2,6, and 7),

displaying the reduced image **on a side of the graphical representation of the polyhedron** (Fig. 6, video element). Col. 6, lines 52-61

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout (a two dimensional EPG menu comprising reduced images of possible selections/ channels) with Cove's invention (showing an EPG/ Menu in three dimensional Polyhedron form, each side showing a selectable item, such as what is shown in Fig. 6, whereby the invention of Oosterhout, showing a reduced-image of the program is maintained) in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

2.3. In response to applicant's argument that "***Neither the cited portions nor any other portion of Cove teach or suggest wherein an image captured from a video stream is displayed in Cove's rotatable function menu***" (Page 11 of Remarks, 4th line from the bottom of the page), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly

suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). As described above, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout (a two dimensional EPG menu comprising reduced images of possible selections/ channels) with Cove's invention (showing an EPG/ Menu in three dimensional Polyhedron form, each side showing a selectable item, such as what is shown in Fig. 6, whereby the invention of Oosterhout, showing a reduced-image of the program is maintained) in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

2.4. With respect to claims 17 and 51 applicant relies on the same arguments as presented for claim 1, which has been analyzed and addressed above.

2.4.1. With respect to claim 51, applicant further argues that the system of Oosterhout and Cove does not teach "***mapping each of the plurality of reduced size thumbnail images to distinct geometric surfaces of the 3-dimensional polyhedron…***", and "***displaying a second graphical representation in which the 3-dimensional polyhedron is rotated within the electronic programming guide*** ….". Page 12 of Remarks, 4th paragraph

Examiner disagrees. Oosterhout discloses a two dimensional EPG with representation of various programs as snapshots/ reduced images. The user is enabled to select multiple programs/ cells and create a custom screen, the process of which is shown in Fig. 3. For example user may select programs from Fig. 5 as highlighted in Figs. 6 and 7 to create a display where various selections of the EPG are shown in Fig. 8 (4 set of program selection options, Col. 5, lines 5-45). Furthermore, the user may reconfigure the presentation of the EPG as shown in Fig. 9). Oosterhout does not teach:

displaying a first graphical representation (Oosterhout 1st graphical representation is shown for example in Fig. 5) **of a 3-dimensional polyhedron** within the electronic programming guide**, wherein a plurality of geometric surfaces of the 3-dimensional polyhedron are simultaneously visible within the electronic programming guide, and wherein the plurality of visible geometric surfaces are rendered on different portions of the screen and have different sizes, and wherein the plurality of visible geometric surfaces are each rendered with a different lighting level based on the relative positions of the surfaces within the polyhedron;**

mapping each of the plurality of reduced size thumbnail images (this feature is disclosed by Oosterhout, as described above, and shown in Figs.

8, and 9, where select programs are mapped to different portions of the screen) **to distinct geometric surfaces of the 3-dimensional polyhedron;**

receiving user input via the electronic programming guide selecting **one of the geometric surfaces of the 3-dimensional polyhedron;**

displaying a second graphical representation (Oosterhout discloses mapping selected programs to different portions of the screen, thereby creating first, second, etc. graphical representations) **in which the 3-dimensional polyhedron is rotated** within the electronic programming guide **such that the geometric surface corresponding to the identified television channel is rendered in a larger portion of the screen than the corresponding surface in the first graphical representation.**

However, Cove discloses:

displaying a first graphical representation **of a 3-dimensional polyhedron** (Figs. 2,6, and 7) within the electronic programming guide (Polyhedron is shown in Fig. 2, superimposed on a movie scene. Polyhedron representing various functions may be superimposed on demand on any window including the program guide)**, wherein a plurality of geometric surfaces of the 3-dimensional polyhedron are simultaneously visible** (Fig. 2, 59a, 59, etc.) within the electronic programming guide**, and wherein the plurality of visible geometric surfaces are rendered on different portions of the screen and have**

different sizes (59a and 59 are in different positions and have different sizes)**, and wherein the plurality of visible geometric surfaces are each rendered with a different lighting level based on the relative positions of the surfaces within the polyhedron** (59a, 59, and 52 have different lighting levels)**;**

mapping each of the plurality of reduced size thumbnail images **to distinct geometric surfaces of the 3-dimensional polyhedron** (various functions may be mapped to various surfaces of the polyhedron, e.g. Fig. 6, video element, TV plus element, each of which may be the mapping of a selected channel as taught by Oosterhout)**;**

receiving user input via the electronic programming guide **selecting one of the geometric surfaces of the 3-dimensional polyhedron** (polyhedron surfaces are selectable by the user, Col. 1, lines 20- 27)**;**

displaying a second graphical representation **in which the 3-dimensional polyhedron is rotated within the** electronic programming guide **such that the geometric surface corresponding to the identified television channel is rendered in a larger portion of the screen than the corresponding surface in the first graphical representation** (rotating the polyhedron to provide the viewer the face presenting the selected program/show of the channel, e.g. - Cove: Fig. 7A, “Exit” represents the largest viewable surface).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout with Cove's invention in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

2.5. With respect to claims 7-10, 21-24, 26-29, 48, 49, and 52-64 (as reflected on page 12 of Remarks, heading of the 5th paragraph, and 4th line of the 5th paragraph; applicant is reminded that in the new set of claims submitted on 2/2/2010, claims 24- 29 were cancelled!) applicant relies on the same arguments as presented for claims 1, 17, 31, and 51 which has been analyzed and addressed above.

2.5.1. With respect to newly presented claims 57 and 60, applicant argues that "***none of the art of record*** (individually or in combination) ***teaches or suggests allowing a user to select video channels to be displayed as sides of polyhedron***". Page 13 of Remarks, 3rd paragraph

Examiner disagrees. First, applicant has failed to point out where specifically this feature is disclosed within applicant's disclosures. As such this limitation

is new matter under 35 U.S.C § 112, first paragraph (which is addressed below in the body of rejection).

Second, the system of Oosterhout and Cove does teach the user's ability to select individual programs/ streams in order to customize the look and feel of the EPG/ menu of desired programs as discussed above for claim 51.

2.5.2. With respect to newly presented claims 58 and 61, applicant argues that "***none of the art of record*** (individually or in combination) ***teaches or suggests allowing a head-end administrator to select video channels to be displayed as sides of polyhedron***". Page 13 of Remarks, 4th paragraph

Examiner disagrees, in the absence of any customization by the user, the composure and complexion of the EPG is at the discretion of the head-end, e.g. Fig. 5 of Oosterhout, where the user is allowed to make further customizations.

2.5.3. With respect to newly presented claims 62-64, applicant argues that "***none of the art of record*** (individually or in combination) ***teaches or suggests allowing a moving or resizing a polyhedron in an electronic programming guide***". Page 13 of Remarks, 5th paragraph

Examiner disagrees, the system of Oosterhout and Cove does teach the user's ability to move or resize a polyhedron in an electronic programming guide as discussed above for claim 51.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3.1. Claims 57 and 60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 57 and 60 recite the newly added limitation ***each of the different video channels corresponding to the different sides of the polyhedron is a video channel selected by a user,*** which has not been previously disclosed by the applicant..

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 10, 17, 31, 48, 49, 51, 53, and 55-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oosterhout et al., USPN 6,405,371 (hereinafter "Oosterhout") in view of Cove et al., USPN 6,411,337 (hereinafter "Cove").

5.1. Regarding claim 1, Oosterhout discloses **a method comprising:**

providing a plurality of individual image areas in an EPG display (Fig. 2);

receiving a user selection corresponding to a selected channel (Fig. 3, elements 300,301,302);

detecting a video stream corresponding to the selected channel (upon selection of channel, 302, the corresponding stream is detected)**;**

capturing a plurality of snapshots snapshot from the video stream (video stream composed of plurality of I-frames, snapshots, which are captured and displayed on screen);

identifying a first snapshot from the plurality of snapshots captured from the video stream (the snapshot/frame received/detected);

converting the first snapshot captured into a reduced image of real-time programming (Fig. 9, e.g. TF2); **and**

displaying the reduced image of real-time programming in a first of the individual image areas (Fig. 9, lower portion of the full screen, image areas associated with the selected channels, reduced image may also be of reduced **resolution,** Col. 1, lines 64-67)**, wherein the reduced video image is associated with the selected channel** (TF2, RTL4, CNN, BRT are reduced images presented on the screen). Col. 3, line 20, through Col.5, line 23.

Oosterhout discloses a two dimensional EPG with representation of various programs as snapshots/ reduced images. Oosterhout is silent on:

displaying a graphical representation of a polyhedron,

displaying the reduced image **on a side of the graphical representation of the polyhedron**

However, Cove, in analogous art, discloses:

displaying a graphical representation of a polyhedron(Figs. 2,6, and 7),

displaying the reduced image **on a side of the graphical representation of the polyhedron** (Fig. 6, video element). Col. 6, lines 52-61

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout with Cove's invention in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

5.1.1. Regarding claim 10, Oosterhout discloses wherein **snapshot is filtered to change the display characteristics of the snapshot,** Col. 4, lines 30-33.

5.1.2. Regarding claim 48, Oosterhout as modified by Cove further discloses:

identifying a segment of the video stream (as taught by Oosterhout, programs are selected based on specified point of time, Col. 4, lines 49-56) **corresponding to the selected channel** (Channels are displayed in Fig. 7)

converting the segment of the video stream to a reduced resolution video stream (Oosterhout, Fig. 7, TF2, which is subsequently selected and presented within the list of selected programs in Fig. 9); **and**

displaying the reduced resolution video stream on the side of the graphical representation of the polyhedron in the first of the individual image areas (Cove: Fig. 6, video element).

5.1.3. Regarding claim 53, the system of Oosterhout and Cove discloses **displaying the graphical representation of the polyhedron** (Cove: Figs. 2, 5, 6,7) **comprises rendering a plurality of reduced images of real-time programming on different sides of the polyhedron** (as analyzed for claim 1, rendering functions or Oosterhout's EPG on Cove's polyhedron) **Wherein each of the plurality of reduced images of real-time programming corresponds to a snapshot from a different channel** (as disclosed by Oosterhout)**, and wherein the different sides of the polyhedron are rendered on different portions of the electronic programming guide (EPG) display, the different portions being simultaneously visible and having different sizes and shapes in the electronic programming guide (EPG) display (**as disclosed by Cove, e.g. Fig. 5, the Audio selection along with other functionalities are displayed on different sides of the polyhedron. Combination of Oosterhout and cove

provides for snapshots of various EPG programs to be presented on different sides of said polyhedron and launched upon user selection (functions as disclosed by Cove).

5.1.4. Regarding claim 56, the system of Oosterhout and Cove discloses **wherein each side of the polyhedron corresponds to a different video channel having a different video stream** (as disclosed by Oosterhout, each mosaic cell represents a programming stream within the EPG menu , e.g. Fig. 2, selectable by the user to launch said channel. Cove teaches creating a polyhedron, each side representative of a function/ program) **, the method further comprising:**

receiving a user command to rotate the graphical representation of the polyhedron (Cove: Figs. 6, and 7; Col. 6, line 37 through Col. 7 line 58; Figs. 5, 8, and 9 further demonstrate rotating of the polyhedron at the user's command)**; and**

updating the EPG display by rotating the graphical representation of the polyhedron so that one of the different selected channels is displayed in the first of the individual image areas (rotating the polyhedron to provide the viewer the face presenting the selected program/show of the channel, Figs. 2 and 4, Col. 5, lines 45- 54)**.**

5.1.4.1. Regarding claim 57, the system of Oosterhout and Cove discloses **wherein each of the different video channels corresponding to the different sides of the polyhedron is a video channel selected by a user for displaying on the polyhedron** (Oosterhout discloses a two dimensional EPG with representation of various programs as snapshots/ reduced images. The user is enabled to select multiple programs/ cells and create a custom screen, the process of which is shown in Fig. 3. For example user may select programs from Fig. 5 as highlighted in Figs. 6 and 7 to create a display where various selections of the EPG are shown in Fig. 8 (4 set of program selection options, Col. 5, lines 5-45). Furthermore, the user may reconfigure the presentation of the EPG as shown in Fig. 9. Cove further teaches that the menu is configured in a polyhedron, improving on the two dimensional menu capability of Oosterhout)**, and wherein the video channels selected for displaying on the polyhedron are a subset of a larger number of video channels available to the user via the electronic programming guide** (Oosterhout's two dimensional menu enables the user to select a subset of available channels/ programs in a custom presentation as shown in Fig. 9. Cove further teaches Cove further teaches that the menu is configured in a polyhedron, improving on the two dimensional menu capability of Oosterhout).

5.1.4.2. Regarding claim 58, the system of Oosterhout and Cove discloses **wherein each of the different video channels corresponding to the different sides of the polyhedron is a preselected video channel selected by a head-end administrator of the electronic programming guide** (in the absence of any customization by the user, the composure and complexion of the EPG is at the discretion of the head-end, e.g. Fig. 5 of Oosterhout, where the user is allowed to make further customizations. Providing a polyhedron capability is disclosed by Cove).

5.1.5. Regarding claim 62, the system of Oosterhout and Cove discloses:

receiving a user command to perform at least one of moving the graphical representation of the polyhedron and resizing the graphical representation of the polyhedron (as shown in Cove's Figs. 5, 6, and 7, and disclosed in Col. 6, line 37 through Col. 7 line 58, the user commands, e.g. up/ down keys, to move/rotate the polyhedron to the desired function. Each rotation causes a resizing of the polyhedron and its facets, for example, rotation 200 in Fig. 5, resized the Audio and lock facets to match the new configuration of the rotated polyhedron)**; and**

updating the EPG display in response to the user command (updating as discussed above to show the newly configured polyhedron)**, the updating comprising at least one of:**

moving the graphical representation of the polyhedron to a different one of the individual image areas (as discussed in the above example, in moving Audio and lock facets) **in the display of the electronic programming guide, and**

changing the size of the graphical representation of the polyhedron within the display of the electronic programming guide (as discussed above for Fig. 5). As discussed for claim 1, the facets of the Cove's polyhedron, such as "Channels", show the reduced images of programs taught by Oosterhout, enabling a user to conveniently select a program in multidimensional polyhedron instead of the two dimensional menu of Oosterhout.

5.2. Regarding claim 17, Oosterhout teaches **an apparatus comprising**:

a tuner (Fig. 1, 22) **configured to tune to a selected channel to receive a video stream** (22, Col. 2, lines 58-67);

a shutter function configured to capture a plurality snapshots from the video stream (capturing video frames at 22, MPEG decoding is accomplished by capturing frames of the transport stream, e.g. I-frames);

an image improver (element 30 enables the system to distinguish viewer's selections from other available programs in the EPG, Col. 3, lines 11-17), **configured to identify a first snapshot from the plurality of snapshots captured from the video stream** (determining which video frames should be presented in a visual program summary , Fig. 2); **and**

a display (24) **configured to:**

display an EPG comprising a plurality of individual image areas (Fig. 2);

and display the first snapshot in the first individual images area, wherein the first snapshot is associated with the selected channel (selected channel of Fig. 2, is highlighted as shown in Fig.5, 45a. The final selection of programs is shown in Fig. 9, TF2, RTL4, CNN, and BRT). Col. 3, line 20, through Col.5, line 23.

Oosterhout discloses a two dimensional EPG with representation of various programs as snapshots/ reduced images. Oosterhout is silent on:

displaying a graphical representation of a polyhedron,

displaying the reduced image **on a side of the graphical representation of the polyhedron**

However, Cove, in analogous art, discloses:

displaying a graphical representation of a polyhedron (Figs. 2,6, and 7),

displaying the reduced image **on a side of the graphical representation of the polyhedron** (Fig. 6, video element). Col. 6, lines 52-61

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout with Cove's invention in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

5.2.1. Regarding claim 49, Oosterhout as modified by Cove further discloses:

identifying a segment of the video stream (as taught by Oosterhout, programs are selected based on specified point of time, Col. 4, lines 49-56) **corresponding to the selected channel** (Channels are displayed in Fig. 7)

converting the segment of the video stream to a reduced resolution video stream (Oosterhout, Fig. 7, TF2, which is subsequently selected and presented within the list of selected programs in Fig. 9); **and**

displaying the reduced resolution video stream on the side of the graphical representation of the polyhedron in the first of the individual image areas (Cove: Fig. 6, video element).

5.2.2. Regarding claim 55, the system of Oosterhout and Cove discloses **displaying the graphical representation of the polyhedron** (Cove: Figs. 2, 5, 6,7) **comprises rendering a plurality of reduced images of real-time programming on different sides of the polyhedron** (as analyzed for claim 17, rendering functions or Oosterhout's EPG on Cove's polyhedron) **Wherein each of the plurality of reduced images of real-time programming corresponds to a snapshot from a different channel** (as disclosed by Oosterhout)**, and wherein the different sides of the polyhedron are rendered on different portions of the electronic programming guide (EPG) display, the different portions being simultaneously visible and having different sizes and shapes in the electronic programming guide (EPG) display (**as disclosed by Cove, e.g. Fig. 5, the Audio selection along with other functionalities are displayed on different sides of the polyhedron. Combination of Oosterhout and cove provides for snapshots of various EPG programs to be presented on

different sides of said polyhedron and launched upon user selection (functions as disclosed by Cove).

5.2.3. Regarding claim 59, the system of Oosterhout and Cove discloses **wherein each side of the polyhedron corresponds to a different video channel having a different video stream** (as disclosed by Oosterhout, each mosaic cell represents a programming stream within the EPG menu , e.g. Fig. 2, selectable by the user to launch said channel. Cove teaches creating a polyhedron, each side representative of a function/ program) **, wherein the apparatus further comprises a receiver configured to receive a user command to rotate the graphical representation of the polyhedron** (Cove: Figs. 6, and 7; Col. 6, line 37 through Col. 7 line 58; Figs. 5, 8, and 9 further demonstrate rotating of the polyhedron at the user's command)**, and wherein the display is further configured to update the display by rotating the graphical representation of the polyhedron so that one of the different selected channels is displayed in the first of the individual image areas** (rotating the polyhedron to provide the viewer the face presenting the selected program/show of the channel, Figs. 2 and 4, Col. 5, lines 45- 54)**.**

5.2.3.1. Regarding claim 60, the system of Oosterhout and Cove discloses **wherein each of the different video channels corresponding to the different sides of the polyhedron is a video channel selected by a user for displaying on the polyhedron** (Oosterhout discloses a two dimensional EPG with representation of various programs as snapshots/ reduced images. The user is enabled to select multiple programs/ cells and create a custom screen, the process of which is shown in Fig. 3. For example user may select programs from Fig. 5 as highlighted in Figs. 6 and 7 to create a display where various selections of the EPG are shown in Fig. 8 (4 set of program selection options, Col. 5, lines 5-45). Furthermore, the user may reconfigure the presentation of the EPG as shown in Fig. 9. Cove further teaches that the menu is configured in a polyhedron, improving on the two dimensional menu capability of Oosterhout)**, and wherein the video channels selected for displaying on the polyhedron are a subset of a larger number of video channels available to the user via the electronic programming guide** (Oosterhout's two dimensional menu enables the user to select a subset of available channels/ programs in a custom presentation as shown in Fig. 9. Cove further teaches Cove further teaches that the menu is configured in a polyhedron, improving on the two dimensional menu capability of Oosterhout).

5.2.3.2. Regarding claim 61, the system of Oosterhout and Cove discloses **wherein each of the different video channels corresponding to the different sides of the polyhedron is a preselected video channel selected by a head-end administrator of the electronic programming guide** (in the absence of any customization by the user, the composure and complexion of the EPG is at the discretion of the head-end, e.g. Fig. 5 of Oosterhout, where the user is allowed to make further customizations. Providing a polyhedron capability is disclosed by Cove).

5.2.4. Regarding claim 63, the system of Oosterhout and Cove discloses:

a receiver configured to receive a user command to perform at least one of moving the graphical representation of the polyhedron and resizing the graphical representation of the polyhedron (as shown in Cove's Figs. 5, 6, and 7, and disclosed in Col. 6, line 37 through Col. 7 line 58, the user commands, e.g. up/ down keys, to move/rotate the polyhedron to the desired function. Each rotation causes a resizing of the polyhedron and its facets, for example, rotation 200 in Fig. 5, resized the

Audio and lock facets to match the new configuration of the rotated polyhedron),

wherein the display is further configured to update the display in response to the user command (updating as discussed above to show the newly configured polyhedron**), the updating comprising at least one of:**

moving the graphical representation of the polyhedron to a different one of the individual image areas (as discussed in the above example, in moving Audio and lock facets) **in the display of the electronic programming guide, and**

changing the size of the graphical representation of the polyhedron within the display of the electronic programming guide (as discussed above for Fig. 5). As discussed for claim 1, the facets of the Cove's polyhedron, such as "Channels", show the reduced images of programs taught by Oosterhout, enabling a user to conveniently select a program in multidimensional polyhedron instead of the two dimensional menu of Oosterhout.

5.3. Computer code claim 31 recite similar limitations as method claim 1, and 4is rejected for the same reasons as addressed.

5.3.1. Computer code claim 64 recite similar limitations as method claim 62, and is rejected for the same reasons as addressed.

5.4. Regarding claim 51, Oosterhout teaches **A method for displaying programming information in an electronic programming guide** (Figs 2, and 9) **comprising**:

receiving at a television system a video stream corresponding to a plurality of television channels (Fig. 1, plurality of channels, MPEG 11.1 through11.n is received at receiver 21)**;**

receiving a plurality of user selections, wherein each user selection identifies a television channel selected to be displayed within an electronic programming guide on the television system (user selection process is outlined in Fig.3. An interim view of user selection is illustrated in Fig. 7, and the final selected channels are shown in Fig.9)**;**

capturing a plurality of snapshot images from the video stream (MPEG I-frames) **based on the plurality of user selections, wherein the plurality of snapshot images comprises at least one video image from each of a plurality of current television programs playing on the plurality of selected television channels** (capturing video frames from selected channels

11.1 through 11.n, as displayed originally in Fig.2, and selected from to present Fig. 9);

converting each of the plurality of snapshot images to reduced size thumbnail images (thumbnail/snapshots, for example Fig. 2, TF2)**;**

identifying the television channel associated with the geometric surface selected via the user input (thumbnail/snapshots are presented in reduced size geometric- two dimensional- squares, Fig. 9, e.g. TF2)**;**

creating an updated reduced sized thumbnail image based on the at least one video image from the identified television channel (thumbnails are updated in real time or based on specific refresh rates; Col. 1, lines 64-67; Col. 4, lines 54-56)**;**

Oosterhout discloses a two dimensional EPG with representation of various programs as snapshots/ reduced images. The user is enabled to select multiple programs/ cells and create a custom screen, the process of which is shown in Fig. 3. For example user may select programs from Fig. 5 as highlighted in Figs. 6 and 7 to create a display where various selections of the EPG are shown in Fig. 8 (4 set of program selection options, Col. 5, lines 5-45). Furthermore, the user may reconfigure the presentation of the EPG as shown in Fig. 9).

Oosterhout does not teach:

displaying a first graphical representation (Oosterhout 1st graphical representation is shown for example in Fig. 5) **of a 3-dimensional polyhedron**

within the electronic programming guide**, wherein a plurality of geometric surfaces of the 3-dimensional polyhedron are simultaneously visible within the electronic programming guide, and wherein the plurality of visible geometric surfaces are rendered on different portions of the screen and have different sizes, and wherein the plurality of visible geometric surfaces are each rendered with a different lighting level based on the relative positions of the surfaces within the polyhedron;**

mapping each of the plurality of reduced size thumbnail images (this feature is disclosed by Oosterhout, as described above, and shown in Figs. 8, and 9, where select programs are mapped to different portions of the screen) **to distinct geometric surfaces of the 3-dimensional polyhedron;**

receiving user input via the electronic programming guide selecting **one of the geometric surfaces of the 3-dimensional polyhedron;**

displaying a second graphical representation (Oosterhout discloses mapping selected programs to different portions of the screen, thereby creating first, second, etc. graphical representations) **in which the 3-dimensional polyhedron is rotated** within the electronic programming guide **such that the geometric surface corresponding to the identified television channel is rendered in a larger portion of the screen than the corresponding surface in the first graphical representation.**

However, Cove, in analogous art, discloses:

displaying a first graphical representation **of a 3-dimensional polyhedron** (Figs. 2,6, and 7) within the electronic programming guide (Polyhedron is shown in Fig. 2, superimposed on a movie scene. Polyhedron representing various functions may be superimposed on demand on any window including the program guide)**, wherein a plurality of geometric surfaces of the 3-dimensional polyhedron are simultaneously visible** (Fig. 2, 59a, 59, etc.) within the electronic programming guide**, and wherein the plurality of visible geometric surfaces are rendered on different portions of the screen and have different sizes** (59a and 59 are in different positions and have different sizes)**, and wherein the plurality of visible geometric surfaces are each rendered with a different lighting level based on the relative positions of the surfaces within the polyhedron** (59a, 59, and 52 have different lighting levels)**;**

mapping each of the plurality of reduced size thumbnail images **to distinct geometric surfaces of the 3-dimensional polyhedron** (various functions may be mapped to various surfaces of the polyhedron, e.g. Fig. 6, video element, TV plus element, each of which may be the mapping of a selected channel as taught by Oosterhout)**;**

receiving user input via the electronic programming guide **selecting one of the geometric surfaces of the 3-dimensional polyhedron** (polyhedron surfaces are selectable by the user, Col. 1, lines 20- 27)**;**

displaying a second graphical representation **in which the 3-dimensional polyhedron is rotated within the** electronic programming guide **such that the geometric surface corresponding to the identified television channel is rendered in a larger portion of the screen than the corresponding surface in the first graphical representation** (rotating the polyhedron to provide the viewer the face presenting the selected program/show of the channel, e.g. - Cove: Fig. 7A, "Exit" represents the largest viewable surface).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout with Cove's invention in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

6. Claims 7-9, 21-23, 52, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oosterhout in view of Cove, in further view of Toklu et al., USPN 6,549,643 (hereinafter "Toklu").

6.1. As to claims 7, 8, and 9, the system of Oosterhout and Cove is silent on **comparing contrast levels, brightness levels, or color saturation levels among the snapshots and determining the most presentable snapshot**

when the most presentable snapshot has a best contrast, a median brightness, or highest color saturation.

However, Toklu, in analogous art, discloses a method and system for accessing a collection of images (Fig. 2, Video in, element 11), and using a technical quality measure (15, 16, 17) to select the best (most presentable) key frame (I-frame, image, element 13), wherein the quality metric indicates the color, brightness, contrast of the image. (Col. 5, line 61 through Col. 6, line 7). The difference between frames via a pixel based frame difference analysis, or a color histogram analysis are reflective are contrast, brightness, and color saturation differences.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and Cove with Toklu's invention in order to select the best image for the presentation on the EPG.

6.2. As to claims 21, 22, and 23, the system of Oosterhout and Cove is silent on **comparing contrast levels, brightness levels, or color saturation levels among the snapshots and determining the most presentable snapshot when the most presentable snapshot has a best contrast, a median brightness, or highest color saturation**.

However, Toklu, in analogous art, discloses a method and system for accessing a collection of images (Fig. 2, Video in, element 11), and using a technical

quality measure (15, 16, 17) to select the best (most presentable) key frame (I-frame, image, element 13), wherein the quality metric indicates the color, brightness, contrast of the image. (Col. 5, line 61 through Col. 6, line 7). The difference between frames via a pixel based frame difference analysis, or a color histogram analysis are reflective are contrast, brightness, and color saturation differences.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and Cove with Toklu's invention in order to select the best image for the presentation on the EPG.

6.3. Regarding claim 52, the system of Oosterhout and Cove is silent on **identifying the first snapshot from the plurality of snapshots captured from the video stream comprises detecting a scene change in the video stream corresponding to the selected channel**.

However, Toklu discloses a key frame (snapshot) selection based on scene change detection (Col. 3, lines 10-16). Also see Shahraray's reference Abstract, Fig. 3 (cited by Toklu) copy of which is also made of record and provided for applicant's convenience.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and cove with Toklu's invention (selecting snapshots based on scene changes in video stream) in order to select the best/ most appropriate snapshot to balance image quality with available resources (see also Toklu's abstract, 1st five lines).

6.4. Regarding claim 54, the system of Oosterhout and Cove is silent on **a scene change detector configured to detect a scene change in the video stream, wherein the image improver is configured to identify the first snapshot based on a scene change detected in the video stream**.

However, Toklu discloses a key frame (snapshot) selection based on scene change detection (Col. 3, lines 10-16). Also see Shahraray's reference Abstract, Fig. 3 (cited by Toklu) copy of which is also made of record and provided for applicant's convenience.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and cove with Toklu's invention (incorporating a scene change detector to select snapshots based on scene changes in video stream) in order to select the best/ most appropriate snapshot to balance image quality with available resources (see also Toklu's abstract, 1st five lines).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES R. MARANDI whose telephone number is (571)270-1843. The examiner can normally be reached on 8:00 AM- 5:00 PM M-F, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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